

## ABSTRACT

A probe card apparatus comprising a rigid substrate having thermal expansion characteristics near that of silicon, laminated with a flex film having laser patterned leads and contact pads, and contact elements comprising noble metals protruding from two major surfaces, the first mirroring the closely spaced chip pads, and the second aligned to the more generously spaced probe card pads, providing an accurate and reproducible, low cost, rapidly fabricated probe contact device, capable of contacting very high density bond pads in either area array or perimeter locations, of being electrically optimized, and readily maintained.

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